

## ANTARCTIC GEOSCIENCE TRANSECTS QML-1A AND -1B (ABSTRACT)

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We propose two transects, QML-1A and -1B, in the area of East Queen Maud Land where Japanese Antarctic Stations Syowa and Mizuho are located. Many geophysical surveys have been carried out between Syowa and Mizuho Stations, the central part of transect QML-1A. The transect consists of both the oceanic area and the continental area. Most of the continental area is covered by a huge ice sheet, the thickness of which is more than 2000 m. The existence of the ice sheet is the distinctive character of the Antarctic Continent transects.

Many outcrops are located along the coastal area of the transect. A chain of outcrops is located along transect QML-1B. There are, however, very few geophysical data available along QML-1B. This transect is proposed for deriving mainly geological information. The geological structure of QML-1B consists of Lützow-Holm and Yamato-Belgica Complexes. The Lützow-Holm Complex is Late Proterozoic medium pressure-temperature metamorphic rocks, and the Yamato-Belgica Complex is Late Proterozoic igneous and low pressure-temperature metamorphic rocks.

All data of transect QML-1 were surveyed by Japanese Antarctic Research Expedition (JARE). No data were available from other countries.

The deep seismic sounding experiments were carried out along the profile between Syowa and Mizuho Stations in 1980-1982, and a crustal thickness of 40 km was obtained. Gravity surveys by over-snow traverses were repeated along the profile of the deep seismic soundings. Aeromagnetic surveys along the line were also made several times. We think that the profile between Syowa and Mizuho Stations provides sufficient data to represent transects in Antarctica and a model cross-section for studying the crustal structure in Antarctica.

The geophysical data in the oceanic area of transect QML-1A is mainly gravity by both sea gravity surveys and the values to be obtained from satellite altimetric sea surface topography.

Only one paleomagnetic data is available at Syowa Station. The heat flow measurements in the Antarctic are very few, and no data are obtained in the area. Several earthquakes with magnitude of 4.3-4.9 were located in the Antarctic Continent. However, only few micro-earthquakes were reported in the transect area.

The working members of the transect QML-1 are as follows:

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